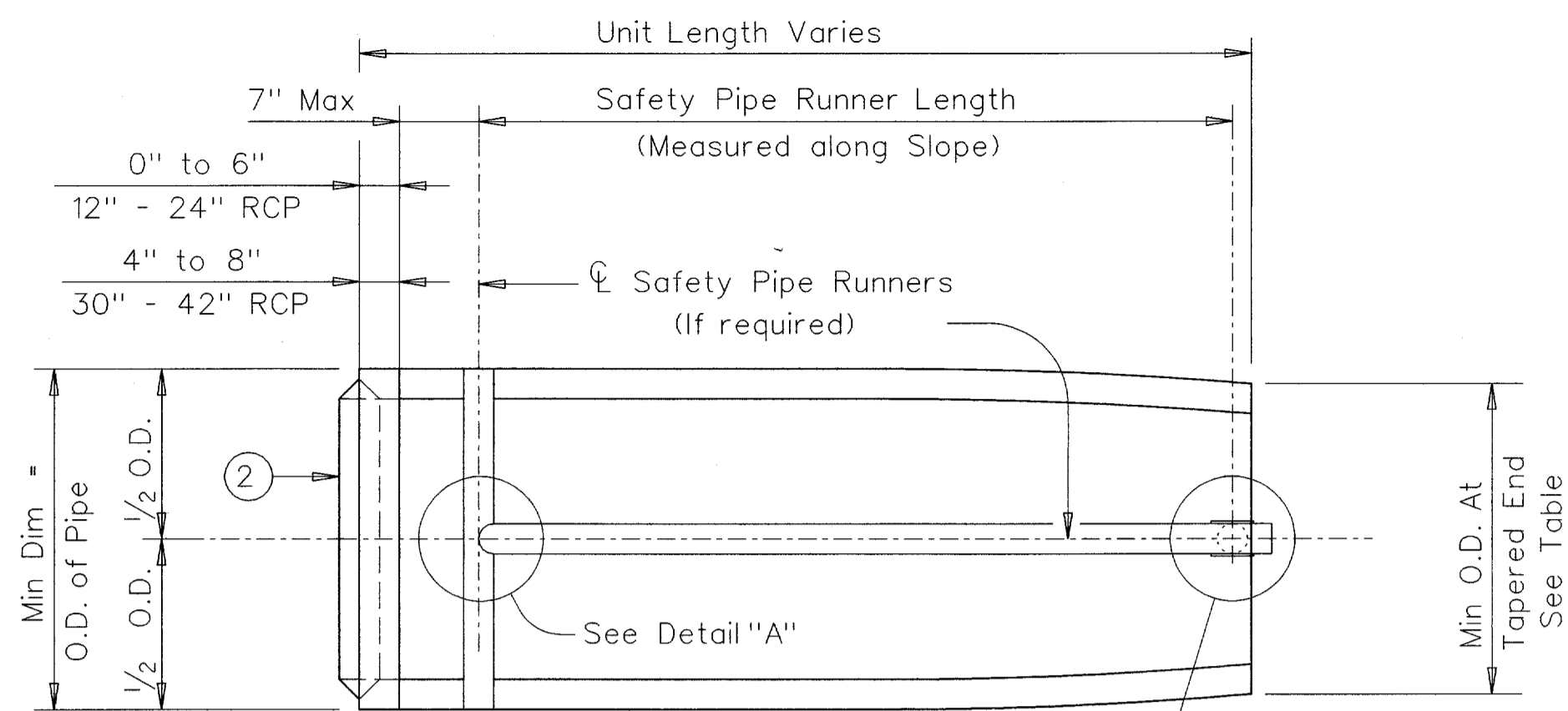


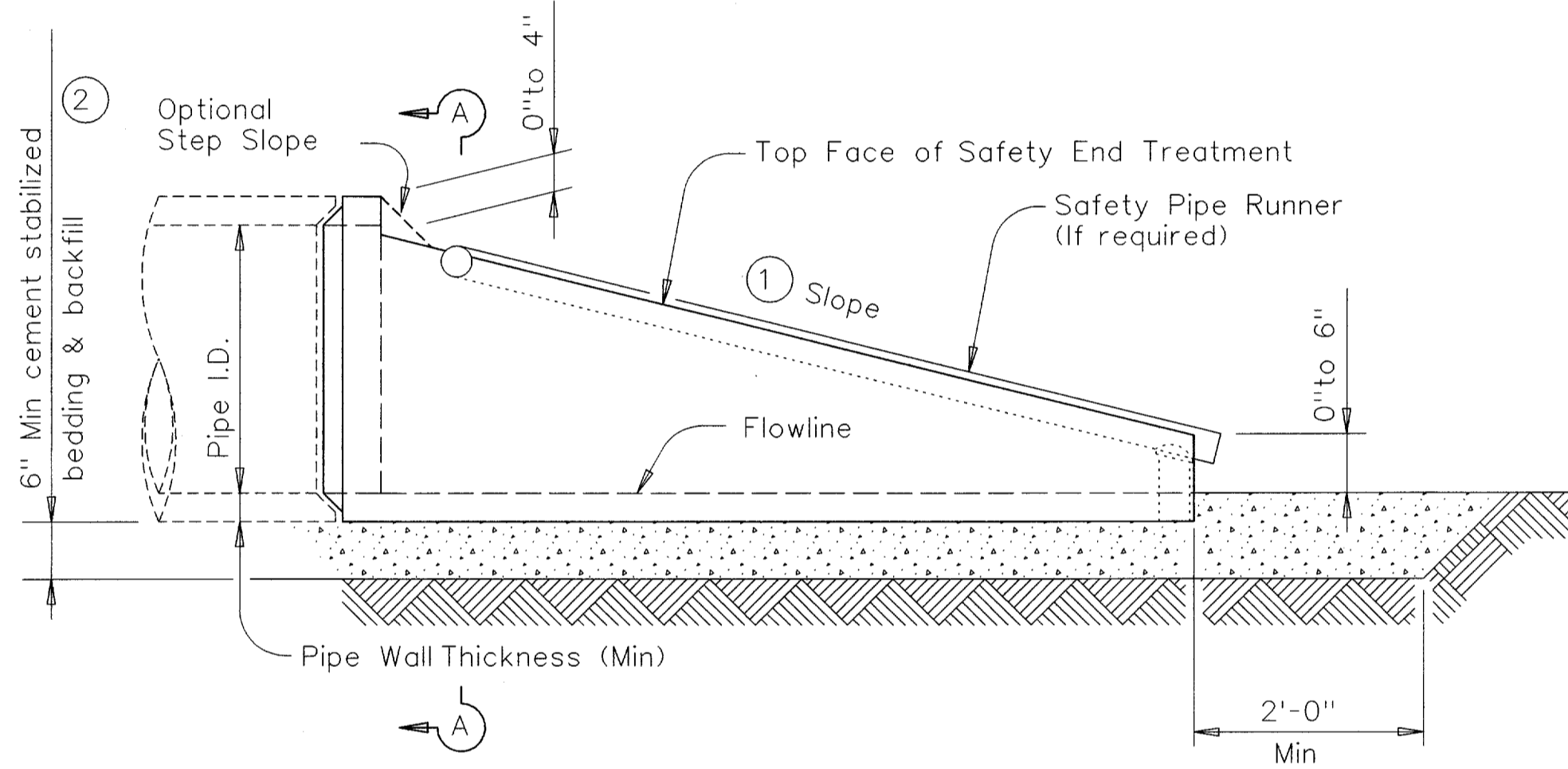
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LEVELS DISPLAYED
ACC:

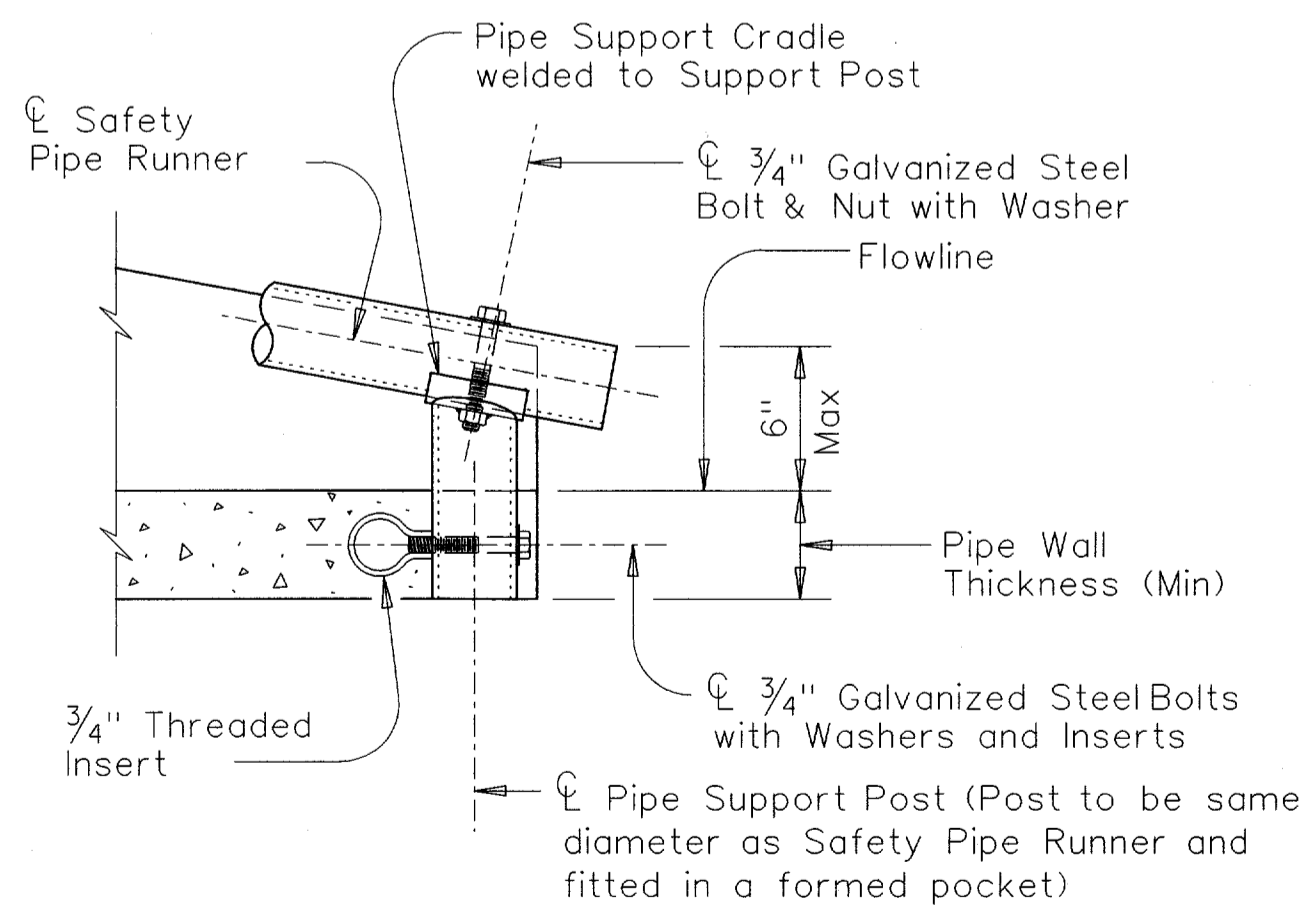


PLAN VIEW

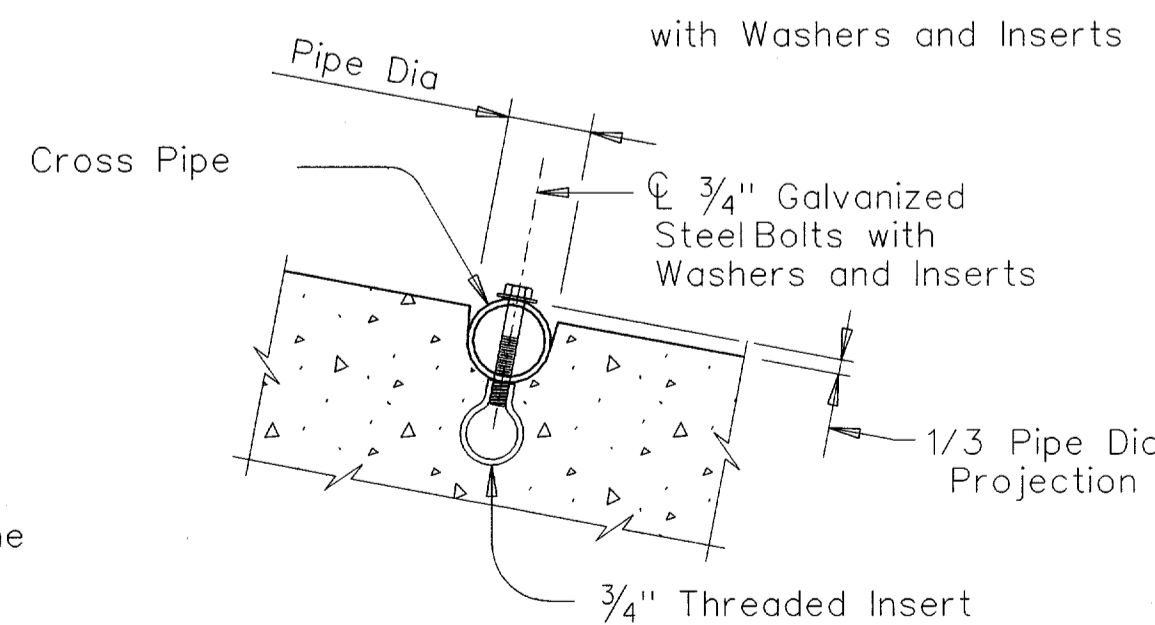
Pocket is to be Formed to fit O.D. of Pipe Support Post if Safety Pipe Runners are used



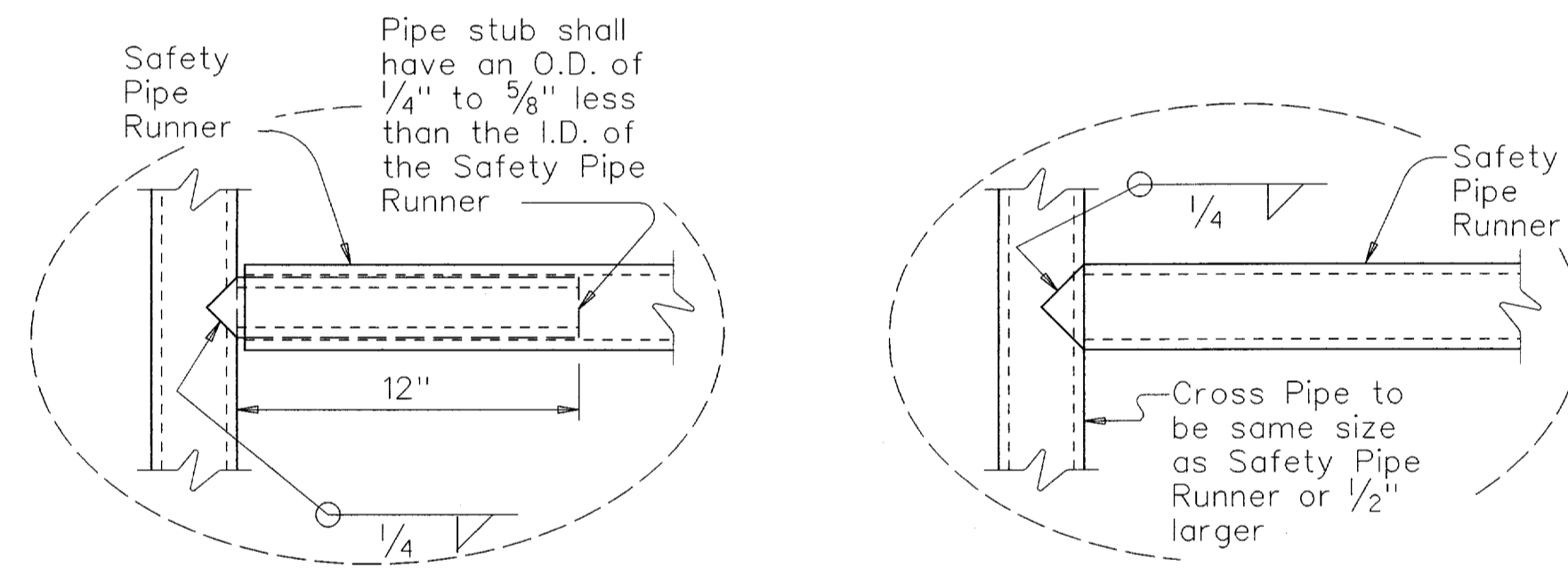
LONGITUDINAL ELEVATION



END DETAIL FOR INSTALLATION OF SAFETY PIPE RUNNERS
(If required)



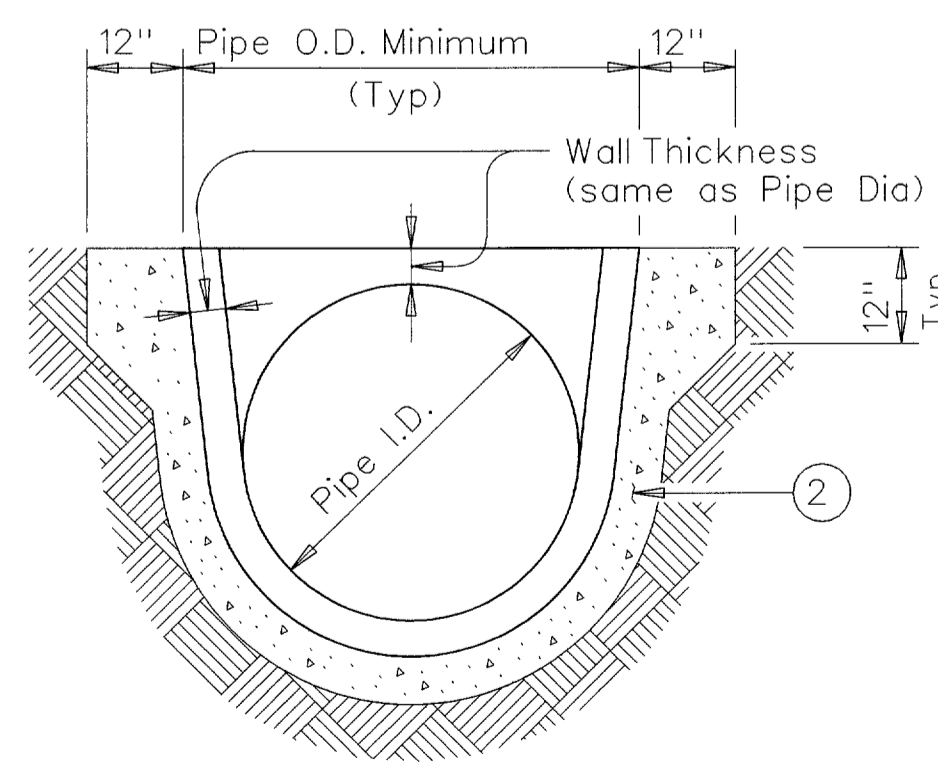
INSTALLATION DETAIL FOR SAFETY PIPE RUNNERS
(If required)



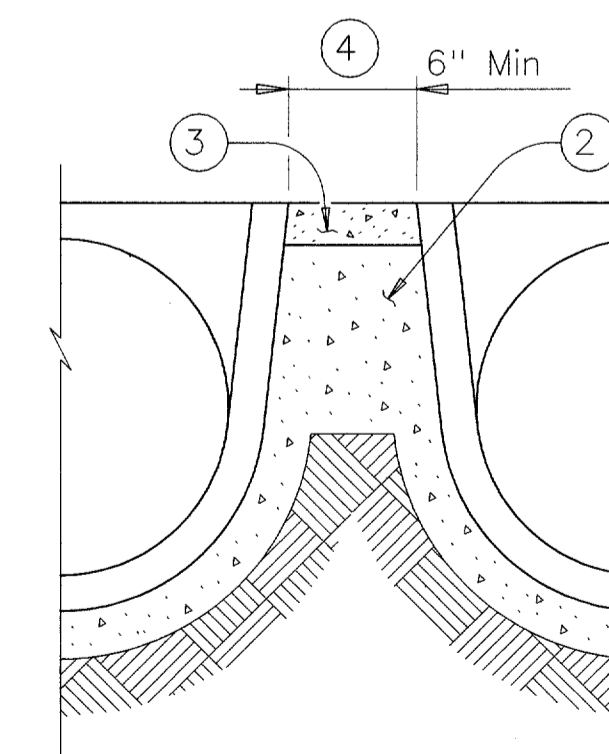
OPTION A

OPTION B

DETAIL A



SECTION A-A



MULTIPLE PIPE INSTALLATION

Maximum Safety Pipe Runner Lengths & Required Safety Pipe Runner Sizes

Maximum Safety Pipe Runner Length	Required Pipe Runner Size		
	Pipe Size	Pipe O.D.	Pipe I.D.
11'- 2"	3" STD	3.500"	3.068"
15'- 6"	3 1/2" STD	4.000"	3.548"
20'-10"	4" STD	4.500"	4.026"
35'- 4"	5" STD	5.563"	5.047"

- Slope as shown elsewhere in the plans. Slope of 3:1 or flatter is required for vehicle safety.
- Cement stabilized bedding and backfill shall be in accordance with the Item, "Excavation and Backfill for Structures". Bedding and backfill shall be considered subsidiary to the Item "Safety End Treatment". When concrete riprap is specified around the Safety End Treatment backfill shall be as directed by Engineer.
- The top 4" of void between Precast End Treatments shall be filled with concrete Riprap and shall be considered subsidiary to Safety End Treatment.
- Clear distance between pipes shall be adjusted to provide for the minimum distance between safety end treatments.

PIPE I.D.	MINIMUM WALL THICKNESS	MINIMUM O.D.	MIN O.D. AT TAPERED END	MIN REINF REQUIREMENTS (Sq in/ft of pipe)	SLOPE	MINIMUM LENGTH OF UNIT	SINGLE PIPE		MULTIPLE PIPE			
							SKEW	PIPE RUNNERS REQUIRED	SKEW	PIPE RUNNERS REQUIRED		
12"	2"	16"	16"	0.07 CIRC.	3:1	2'-0"	<=45 deg	No	<=45 deg	No		
											4:1	2'-8"
											6:1	4'-0"
15"	2 1/4"	19 1/2"	19"	0.07 CIRC.	3:1	2'-10"	<=45 deg	No	<=45 deg	No		
											4:1	3'-9"
											6:1	5'-8"
18"	2 1/2"	23"	21 1/2"	0.07 CIRC.	3:1	3'-8"	<=45 deg	No	<=45 deg	No		
											4:1	4'-10"
											6:1	7'-3"
24"	3"	30"	27"	0.07 CIRC.	3:1	5'-3"	<=45 deg	No	<=30 deg	No		
											4:1	7'-0"
											6:1	10'-6"
30"	3 1/2"	37"	31"	0.18 CIRC.	3:1	6'-3"	<=15 deg	No	<=15 deg	No		
											4:1	8'-2"
											6:1	12'-1"
36"	4"	44"	36"	0.19 ELIP.	3:1	7'-10"	=0 deg	No	>0 deg	Yes		
											4:1	10'-4"
											6:1	15'-4"
42"	4 1/2"	51"	41 1/2"	0.23 ELIP.	3:1	9'-6"	>0 deg	Yes	>0 deg	Yes		
											4:1	12'-6"
											6:1	18'-7"

GENERAL NOTES:

Precast safety end treatment for reinforced concrete pipe may be used for TYPE II end treatment as specified in Item "Safety End Treatment". When Precast Safety End Treatment is used as a Contractor's alternate to mitered RCP, Riprap will not be required unless noted otherwise on the plans.

All precast concrete end sections shall be manufactured in accordance with Item "Reinforced Concrete Pipe Culverts" and in accordance with ASTM Specification C-76, Class III, Wall B for circular pipe.

Precast concrete end sections shall be provided with a spigot or bellend for compatibility to upstream or downstream end conditions with sufficient annular space to allow for mortar, cold applied asphalt joint compound or pre-formed plastic gasket material.

Methods of lifting shall be provided by the manufacturer for ease of loading, unloading and installation.

Pipe Runners are designed for a traversing load of 1,800 Lbs at yield as recommended by Research Report 280-1, "Safety Treatment of Roadside Cross-Drainage Structures", Texas Transportation Institute, March 1981.

Safety Pipe Runners, Cross Pipes, Pipe Support Posts, and Pipe Stubs shall conform to the requirements of ASTM A53 (Type E or S, Grade B), ASTM A500 (Grade B), or API 5LX52.

All steel components except reinforcing, shall be galvanized after fabrication. Galvanizing damaged during transport or construction shall be repaired in accordance with the specifications.

Texas Department of Transportation
Bridge Division

PRECAST SAFETY END TREATMENT TYPE II ~ CROSS DRAINAGE

PSET-RC

FILE: psetrcse.dgn	DN: RLW	CK: KLR	DW: JTR	CK: GAF
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REVISIONS Nov 2001 - Added General Note about Riprap.	COUNTY	CONTROL SECT	JOB	HIGHWAY